Proposed Claim Amendments for Discussion

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TITLE	:	**INTELLIGENT COLOR TO TEXTURE CONVERTER**
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LISTING OF CLAIMS:

1. (Withdrawn) A method for rendering an image described in a multi-colorant color space, in a single-colorant color space, the method comprising:

examining the image to find conflicting colors in the image;

creating a single colorant version of the image; and

selectively adding texture to portions of the single colorant version of the image that are associated with the conflicting colors.

2. (Withdrawn) (Previously Presented) The method for rendering an image of claim 1 wherein ~~the step of~~ examining the image to find conflicting colors ~~further~~ comprises:

collecting a histogram of the multicolor image pixels wherein histogram bins tally and sort pixels based on at least one characteristic; and

examining the histogram to find color peaks that are similar in the at least one characteristic.

3. (Withdrawn) (Previously Presented) The method for rendering an image of claim 1 wherein ~~the step of~~ examining the image to find conflicting colors ~~further~~ comprises:

examining the image to find color peaks in the image that have similar lightness (L*).

4. (Currently Amended) A method for rendering an image described in a multi-color color space, in a single-colorant color space, the method comprising:

collecting histogram information from the multi-color color space image wherein bins within the histogram classify image pixels based on luminance information and hue information;

classifying peaks within the histogram that have similar luminance as conflicting colors; and

applying at least one respective spatial modulation to, and only to, at least one ~~gray scale~~ respective single colorant version of at least one of the conflicting colors, thereby ~~making~~ ensuring that all ~~gray scale~~ single colorant versions of colors in the image are visually distinguishable from one another while minimizing distortions in a remainder of the single colorant version of the image.

5. (Previously Presented) The method for rendering an image of claim 4 further comprising before classifying, locating peaks within the histogram data.

6. (Currently Amended) The method for rendering an image of claim 4 wherein applying spatial modulation further comprises associating a unique modulation to the ~~gray scale~~ single colorant versions of each of the conflicting colors.

7. (Currently Amended) The method for rendering an image of claim 4 further comprising:

measuring a color distance between at least one pixel in the image and at least one conflicting color; and,

applying an attenuated spatial modulation to at least one pixel in the ~~gray scale~~ single colorant version of the image, the attenuation ranging from zero to one hundred percent of a reference modulation, the level of attenuation being a

function of the measured color distance.

8. (Currently Amended) The method for rendering an image of claim 7 wherein applying an attenuated modulation further comprises:

applying an attenuated spatial modulation to at least one pixel in the ~~gray scale~~ single colorant version of the image, the attenuation ranging from zero to one hundred percent of a reference modulation, the level of attenuation being a non-linear function of the measured color distance.

9. (Previously Presented) The method for rendering an image of claim 7 wherein the step of applying an attenuated modulation further comprises:

applying an attenuated spatial modulation to at least one pixel in the image, the attenuation ranging from zero to one hundred percent of a reference modulation, the level of attenuation being a linear function of the measured color distance.

10. (Currently Amended) An image processor operative to generate a single colorant version of a color image, the single colorant version including modulations only where necessary to distinguish between conflicting colors, the image processor comprising:

an image analyzer operative to find and classify conflicting colors in the color image; and

a gray scale modulator operative to add spatial modulations to ~~gray scale~~ single colorant versions of only the conflicting colors within the single colorant version of the color image.

11. (Previously Presented) The image processor of claim 10 wherein the image analyzer further comprises:

a histogram collector operative to classify pixels in the color image based on a characteristic that is also used to generate the single colorant version of the color image.

12. (Previously Presented) The image processor of claim 11 wherein the image analyzer further comprises:

a conflicting color detector operative to examine the histogram and find pixels that are similar with respect to the characteristic that is used to generate the single colorant version of the image.

13. (Currently Amended) The image processor of claim 10 wherein the ~~image~~ gray scale modulator further comprises:

a color relationship discriminator operative to receive conflicting color classification information from the image analyzer and color image pixel information, the color relationship discriminator operative to determine a relationship between the color image pixel and the conflicting color.

14. (Currently Amended) The image processor of claim 13 wherein the ~~image~~ gray scale modulator further comprises:

a spatial modulation attenuator operative to attenuate a gray scale modulation based on the relationship between the color image pixel and the conflicting color.

15. (Currently Amended) The image processor of claim 13 wherein the image gray scale modulator further comprises:

a spatial modulation generator operative to generate a gray scale spatial modulation for application to a ~~gray scale~~ single colorant version of a color.

16. (Previously Presented) The image processor of claim 13 wherein the relationship between the conflicting color and the color image pixel comprises a color distance within a color space.

17. (Previously Presented) The image processor of claim 13 wherein the relationship between the conflicting color and the color image pixel comprises a color distance within a perceptually uniform color space.

18. (Previously Presented) The image processor of claim 13 wherein the relationship between the conflicting color and the color image pixel comprises a color distance within a CIELAB color space.

19. (Original) The image processor of claim 10 wherein the image processor further comprises an image receiver.

20. (Original) The image processor of claim 19 wherein the image receiver further comprises a xerographic printer.

21. (Previously Presented) A method for rendering an image described in a multi-colorant color space, in a single-colorant color space, the method comprising:

examining the image to find conflicting colors in the image;

creating a single colorant version of the image; and

selectively spatially modulating a portion of the single colorant version of the image that is associated with one of the conflicting colors.

22. (Currently Amended) The method for rendering an image of claim ~~1~~ 21 wherein examining the image to find conflicting colors further comprises:

collecting a histogram of the multicolor image pixels wherein histogram bins tally and sort pixels based on at least one characteristic; and

examining the histogram to find color peaks that are similar in the at least one characteristic.

23. (Currently Amended) The method for rendering an image of claim ~~1~~ 21 wherein examining the image to find conflicting colors further comprises:

examining the image to find color peaks in the image that have similar lightness (L*).